

## ABSTRACT

The present invention provides a food waste disposer having an upper food conveying section, a motor section, a central grinding section and a controller. The upper food conveying section includes a housing forming an inlet to receive food waste. The  
5 motor section includes a switched reluctance machine having a rotor and a stator. The rotor imparts rotational movement to a rotatable shaft. The central grinding section is disposed between the food conveying section and the motor section. The food conveying section conveys food waste to the grinding section. The grinding section includes a grinding mechanism where a portion of the grinding mechanism is mounted to the  
10 rotatable shaft. The controller is electrically connected to the stator to control the switched reluctance machine. The controller is capable of directing rotational movement to the rotatable shaft and the portion of the grinding mechanism mounted to the rotatable shaft. The controller is further capable of maintaining the rotational movement of the rotatable shaft at more than one rotational speed. The present invention also includes  
15 methods of operating a variable speed motor in different operational modes such as soft start mode, optimized grinding mode, idle mode, rinse mode and anti-jamming mode.